

SEQUENCE LISTING

<110> Attie, Alan D
Stoehr, Jonathan P
Schueler, Kathryn L
Clee, Susanne Michell

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 Ala Pro Gly Asp Arg Ala Leu Ser Leu Glu Arg Ala Arg Gly Thr Gly
 85 90 95
 Ala Ser Met Ala Val Ala Ala Arg Ser Gly Arg Arg Arg Arg Ser Gly
 100 105 110
 Ala Asp Gln Glu Lys Ala Glu Arg Gly Glu Gly Ala Ser Arg Ser Pro
 115 120 125
 Arg Gly Val Leu Arg Asp Gly Gly Gln Gln Glu Pro Gly Thr Arg Glu
 130 135 140
 Arg Asp Pro Asp Lys Ala Thr Arg Phe Arg Met Glu Glu Leu Arg Leu
 145 150 155 160
 Thr Ser Thr Thr Phe Ala Leu Thr Gly Asp Ser Ala His Asn Gln Ala
 165 170 175
 Met Val His Trp Ser Gly His Asn Ser Ser Val Ile Leu Ile Leu Thr
 180 185 190
 Lys Leu Tyr Asp Tyr Asn Leu Gly Ser Ile Thr Glu Ser Ser Leu Trp
 195 200 205
 Arg Ser Thr Asp Tyr Gly Thr Thr Tyr Glu Lys Leu Asn Asp Lys Val
 210 215 220
 Gly Leu Lys Thr Ile Leu Gly Tyr Leu Tyr Val Cys Pro Thr Asn Lys
 225 230 235 240
 Arg Lys Ile Met Leu Leu Thr Asp Pro Glu Ile Glu Ser Ser Leu Leu
 245 250 255
 Ile Ser Ser Asp Glu Gly Ala Thr Tyr Gln Lys Tyr Arg Leu Asn Phe
 260 265 270
 Tyr Ile Gln Ser Leu Leu Phe His Pro Lys Gln Glu Asp Trp Ile Leu
 275 280 285
 Ala Tyr Ser Gln Asp Gln Lys Leu Tyr Ser Ser Ala Glu Phe Gly Arg
 290 295 300
 Arg Trp Gln Leu Ile Gln Glu Gly Val Val Pro Asn Arg Phe Tyr Trp
 305 310 315 320
 Ser Val Met Gly Ser Asn Lys Glu Pro Asp Leu Val His Leu Glu Ala
 325 330 335
 Arg Thr Val Asp Gly His Ser His Tyr Leu Thr Cys Arg Met Gln Asn
 340 345 350
 Cys Thr Glu Ala Asn Arg Asn Gln Pro Phe Pro Gly Tyr Ile Asp Pro
 355 360 365

Asp	Ser	Leu	Ile	Val	Gln	Asp	His	Tyr	Val	Phe	Val	Gln	Leu	Thr	Ser		
370						375					380						
Gly	Gly	Arg	Pro	His	Tyr	Tyr	Val	Ser	Tyr	Arg	Arg	Asn	Ala	Phe	Ala		
385					390					395					400		
Gln	Met	Lys	Leu	Pro	Lys	Tyr	Ala	Leu	Pro	Lys	Asp	Met	His	Val	Ile		
				405					410					415			
Ser	Thr	Asp	Glu	Asn	Gln	Val	Phe	Ala	Ala	Val	Gln	Glu	Trp	Asn	Gln		
			420					425					430				
Asn	Asp	Thr	Tyr	Asn	Leu	Tyr	Ile	Ser	Asp	Thr	Arg	Gly	Val	Tyr	Phe		
		435					440					445					
Thr	Leu	Ala	Leu	Glu	Asn	Val	Gln	Ser	Ser	Arg	Gly	Pro	Glu	Gly	Asn		
	450					455					460						
Ile	Met	Ile	Asp	Leu	Tyr	Glu	Val	Ala	Gly	Ile	Lys	Gly	Met	Phe	Leu		
465					470					475					480		
Ala	Asn	Lys	Lys	Ile	Asp	Asn	Gln	Val	Lys	Thr	Phe	Ile	Thr	Tyr	Asn		
				485					490					495			
Lys	Gly	Arg	Asp	Trp	Arg	Leu	Leu	Gln	Ala	Pro	Asp	Thr	Asp	Leu	Arg		
			500					505					510				
Gly	Asp	Pro	Val	His	Cys	Leu	Leu	Pro	Tyr	Cys	Ser	Leu	His	Leu	His		
	515						520					525					
Leu	Lys	Val	Ser	Glu	Asn	Pro	Tyr	Thr	Ser	Gly	Ile	Ile	Ala	Ser	Lys		
	530					535					540						
Asp	Thr	Ala	Pro	Ser	Ile	Ile	Val	Ala	Ser	Gly	Asn	Ile	Gly	Ser	Glu		
545					550					555					560		
Leu	Ser	Asp	Thr	Asp	Ile	Ser	Met	Phe	Val	Ser	Ser	Asp	Ala	Gly	Asn		
				565					570					575			
Thr	Trp	Arg	Gln	Ile	Phe	Glu	Glu	Glu	His	Ser	Val	Leu	Tyr	Leu	Asp		
			580					585					590				
Gln	Gly	Gly	Val	Leu	Val	Ala	Met	Lys	His	Thr	Ser	Leu	Pro	Ile	Arg		
	595						600					605					
His	Leu	Trp	Leu	Ser	Phe	Asp	Glu	Gly	Arg	Ser	Trp	Ser	Lys	Tyr	Ser		
	610					615					620						
Phe	Thr	Ser	Ile	Pro	Leu	Phe	Val	Asp	Gly	Val	Leu	Gly	Glu	Pro	Gly		
625					630					635					640		
Glu	Glu	Thr	Leu	Ile	Met	Thr	Val	Phe	Gly	His	Phe	Ser	His	Arg	Ser		
				645					650					655			
Glu	Trp	Gln	Leu	Val	Lys	Val	Asp	Tyr	Lys	Ser	Ile	Phe	Asp	Arg	Arg		
			660					665					670				
Cys	Ala	Glu	Glu	Asp	Tyr	Arg	Pro	Trp	Gln	Leu	His	Ser	Gln	Gly	Glu		
	675						680					685					

Ala	Cys	Ile	Met	Gly	Ala	Lys	Arg	Ile	Tyr	Lys	Lys	Arg	Lys	Ser	Glu	690	695	700
Arg	Lys	Cys	Met	Gln	Gly	Lys	Tyr	Ala	Gly	Ala	Met	Glu	Ser	Glu	Pro	705	710	715
Cys	Val	Cys	Thr	Glu	Ala	Asp	Phe	Asp	Cys	Asp	Tyr	Gly	Tyr	Glu	Arg	725	730	735
His	Ser	Asn	Gly	Gln	Cys	Leu	Pro	Ala	Phe	Trp	Phe	Asn	Pro	Ser	Ser	740	745	750
Leu	Ser	Lys	Asp	Cys	Ser	Leu	Gly	Gln	Ser	Tyr	Leu	Asn	Ser	Thr	Gly	755	760	765
Tyr	Arg	Lys	Val	Val	Ser	Asn	Asn	Cys	Thr	Asp	Gly	Val	Arg	Glu	Gln	770	775	780
Tyr	Thr	Ala	Lys	Pro	Gln	Lys	Cys	Pro	Gly	Lys	Ala	Pro	Arg	Gly	Leu	785	790	795
Arg	Ile	Val	Thr	Ala	Asp	Gly	Lys	Leu	Thr	Ala	Glu	Gln	Gly	His	Asn	805	810	815
Val	Thr	Leu	Met	Val	Gln	Leu	Glu	Glu	Gly	Asp	Val	Gln	Arg	Thr	Leu	820	825	830
Ile	Gln	Val	Asp	Phe	Gly	Asp	Gly	Ile	Ala	Val	Ser	Tyr	Val	Asn	Leu	835	840	845
Ser	Ser	Met	Glu	Asp	Gly	Ile	Lys	His	Val	Tyr	Gln	Asn	Val	Gly	Ile	850	855	860
Phe	Arg	Val	Thr	Val	Gln	Val	Asp	Asn	Ser	Leu	Gly	Ser	Asp	Ser	Ala	865	870	875
Val	Leu	Tyr	Leu	His	Val	Thr	Cys	Pro	Leu	Glu	His	Val	His	Leu	Ser	885	890	895
Leu	Pro	Phe	Val	Thr	Thr	Lys	Asn	Lys	Glu	Val	Asn	Ala	Thr	Ala	Val	900	905	910
Leu	Trp	Pro	Ser	Gln	Val	Gly	Thr	Leu	Thr	Tyr	Val	Trp	Trp	Tyr	Gly	915	920	925
Asn	Asn	Thr	Glu	Pro	Leu	Ile	Thr	Leu	Glu	Gly	Ser	Ile	Ser	Phe	Arg	930	935	940
Phe	Thr	Ser	Glu	Gly	Met	Asn	Thr	Ile	Thr	Val	Gln	Val	Ser	Ala	Gly	945	950	955
Asn	Ala	Ile	Leu	Gln	Asp	Thr	Lys	Thr	Ile	Ala	Val	Tyr	Glu	Glu	Phe	965	970	975
Arg	Ser	Leu	Arg	Leu	Ser	Phe	Ser	Pro	Asn	Leu	Asp	Asp	Tyr	Asn	Pro	980	985	990
Asp	Ile	Pro	Glu	Trp	Arg	Arg	Asp	Ile	Gly	Arg	Val	Ile	Lys	Lys	Ser	995	1000	1005

Leu Val Glu Ala Thr Gly Val Pro Gly Gln His Ile Leu Val Ala Val
 1010 1015 1020

Leu Pro Gly Leu Pro Thr Thr Ala Glu Leu Phe Val Leu Pro Tyr Gln
 1025 1030 1035 1040

Asp Pro Ala Gly Glu Asn Lys Arg Ser Thr Asp Asp Leu Glu Gln Ile
 1045 1050 1055

Ser Glu Leu Leu Ile His Thr Leu Asn Gln Asn Ser Val His Phe Glu
 1060 1065 1070

Leu Lys Pro Gly Val Arg Val Leu Val His Ala Ala His Leu Thr Ala
 1075 1080 1085

Ala Pro Leu Val Asp Leu Thr Pro Thr His Ser Gly Ser Ala Met Leu
 1090 1095 1100

Met Leu Leu Ser Val Val Phe Val Gly Leu Ala Val Phe Val Ile Tyr
 1105 1110 1115 1120

Lys Phe Lys Arg Arg Val Ala Leu Pro Ser Pro Pro Ser Pro Ser Thr
 1125 1130 1135

Gln Pro Gly Asp Ser Ser Leu Arg Leu Gln Arg Ala Arg His Ala Thr
 1140 1145 1150

Pro Pro Ser Thr Pro Lys Arg Gly Ser Ala Gly Ala Gln Tyr Ala Ile
 1155 1160 1165